BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2018-318-E

In re: Application of Duke Energy Progress, LLC for Adjustments in Electric Rate Schedules and Tariffs and Request for an Accounting Order	**SURREBUTTAL TESTIMONY OF EZRA D. HAUSMAN, PH.D. FOR SIERRA CLUB**

I. IDENTIFICATION OF WITNESS AND PURPOSE OF TESTIMONY

Q. Please state your name, occupation, and business address.

A. My name is Ezra D. Hausman, Ph.D. I am an independent consultant doing business as Ezra Hausman Consulting, operating from offices at 77 Kaposia Street, Auburndale, Massachusetts 02466.

Q. Are you the same Dr. Ezra Hausman that submitted direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my testimony is to respond to statements made during the rebuttal testimony of Duke Energy Progress ("DEP" or "the Company") witness Julie K. Turner regarding (a) DEP investments in bottom ash handling at the Roxboro plant, and (b) the need for comprehensive retirement analysis before making capital investments in coal plants.

II. STATEMENTS MADE BY DEP WITNESS JULIE TURNER

Q. What statement by Ms. Turner would you like to address regarding the Company's investment of ratepayer money in a new bottom ash handling system?

A. In describing why the Company decided *not* to perform a full retirement analysis for its Roxboro coal plant prior to making this investment, Ms. Turner states that "the Company considered system operational impacts, timing impacts, and overall feasibility of a potential retirement scenario in assessing the Roxboro dry bottom ash system" and that "the Company looked at the need for replacement generation of the approximate 2,400 MW Roxboro facility, at a cost of approximately $2 billion, excluding gas pipeline cost." (Turner Rebuttal at 4, lines 4–10.)

Q. Do you find the justification offered to be reasonable?

A. No. According to Ms. Turner's statement, the Company limited the alternatives for meeting customer demand to a single alternative that would cost approximately $2 billion. The reference to additional gas pipeline costs suggests that the only alternative considered was gas-fired generation. As I stated in my direct testimony, a comprehensive retirement analysis "should include consideration of a full range of alternatives for meeting customer needs in the absence of each coal unit, including *demand management, transmission, renewables, and storage*." (Hausman Direct at 14, lines 3–8 (emphasis added).)

Moreover, as demonstrated in my direct testimony, the Company has been operating each of the units at Roxboro and Mayo at much lower capacity factors than in the past, with a steady downward trend. (Hausman Direct at 21–26.) As shown in Figures 1 and 2 of my Direct Testimony, while each of the Mayo and Roxboro units operated at a capacity factor between 60% and 80% through 2012, by 2018 they were each operating at capacity factors around 30% or below.

Given this trend, there is no reason to assume that a megawatt-for-megawatt replacement of coal-fired generation at Roxboro with gas-fired generation is the best, least-cost resource plan for meeting customer requirements. The Company's failure to explore other alternatives to the continued operation of and investment in its old coal units is unjustified and unreasonable.

Q. Does Ms. Turner give any other reasons why the Company did not perform a comprehensive retirement analysis for the Roxboro plant?

A. Yes. In disagreeing with my opinion that the Company should have analyzed the costeffectiveness of continuing to invest in and operate the Roxboro plant vis-à-vis replacing it with clean energy alternatives—including those that can address peak demand, like storage-plus-storage technologies—Ms. Turner says: "Furthermore, the station had already made significant investment in selective catalytic reduction (SCR) and flue gas desulfurization (FGD) systems between 2001 and 2008, respectively, that made the station well outfitted for air regulations." (Turner Rebuttal at 4, lines 10–13.)

Q. Does the fact that the Roxboro plant is equipped with SCR and FGD systems negate the need for retirement analysis before making *additional* capital investments at the plant?

A. No. This logic risks throwing good ratepayer money after bad if the coal units are uneconomic. In fact, several coal plants in the United States have been retired despite being equipped with SCR and FGD, because they could not compete economically with lower-cost energy sources. Examples include the St. John's River Power Park, owned by Florida Power & Light and Jacksonville Electric;[1] the J.M. Stuart and Killen plants, owned by Dayton Power & Light; [2] the Bull Run plant and Paradise plant Unit 3, owned by the Tennessee Valley Authority;[3] and the Bailly plant owned by NIPSCO.[4] Although the details vary, all of these units faced tough economic competition from alternative

[1] Power Engineering, *St. John's River Power Park Officially Shuts Down*, Jan. 8, 2018, *available at* https://www.power-eng.com/articles/2018/01/st-johns-river-power-park-officially-shuts-down.html.

[2] Utility Dive, *DP&L to retire 3,000 MW of coal generation in Ohio*, Mar, 21, 2017, *available at* https://www.utilitydive.com/news/dpl-to-retire-3000-mw-of-coal-generation-in-ohio/438556/.

[3] Amer. Public Power Ass'n, *TVA Board Approves Retirement of Coal-fired Generation*, Feb. 14, 2019, *available at* https://www.publicpower.org/periodical/article/tva-board-approves-retirement-coal-fired-generation.

[4] NWI Times, *Bailly Generating Station's coal-fired units retired*, June 1, 2018 *available at* https://www.nwitimes.com/business/local/bailly-generating-station-s-coal-fired-units-retired/article_2f2eef30-1f19-5004-9557-e7932d584431.html.

resources. They were all running at much lower capacity factors than in the past, similar to the situation at DEP's Roxboro and Mayo plants, despite having both FGD and SCR installed. DEP should perform a full retirement analysis that is based on projected costs of alternative strategies for meeting its customers' needs, without regard to sunk costs.

Q. Please describe the rebuttal testimony of Ms. Turner that you would like to address regarding retirement analysis prior to making investments in coal plants in general?

A. Ms. Turner states that the Company performs retirement analyses "as needed" and that its fleet management practices are "reasonable and appropriate." (Turner Rebuttal at 5, lines 10–11, 15–16.)

Q. Does Ms. Turner explain what "as needed" means or point to any evidence regarding reasonableness or appropriateness of the Company's management practices of its coal fleet?

A. No. "As needed" is not defined, and the assertion that the Company's management practices are "reasonable and appropriate" is conclusory. It appears that the Company expects the Commission and its customers to simply take its word that continuing to invest in maintenance and upgrades of a fifty-year-old coal plant is a prudent and reasonable use of ratepayer resources. However, the Company's failure to evaluate the economics of continued investment in its coal units versus potentially lower-cost alternatives, including clean energy resources, means that investments of capital at those units very well could be uneconomic, unreasonable, and imprudent.

Q. Do you agree with Ms. Turner's statement that "the Company did perform a comprehensive retirement analysis for Mayo station in 2016"?

A. No. As discussed in detail in my direct testimony (*see* Hausman Direct at 9–10), the "analysis" on which the Company based its decision to continue operating Mayo is not comprehensive and did not involve an arms-length comparison of the economics of those units relative to a variety of resource alternatives, including demand-side, renewable, and energy storage resources.

Q. What else does Ms. Turner say about your recommendation that the Commission require retirement analyses before additional capital investments at the Company's coal units?

A. Ms. Turner states that "[t]he Company is well aware that it has the responsibility to justify its capital investments in rate cases, including the prudency of its costs and the usefulness of its investments for customers. However, the Company is responsible for managing its generation fleet, including what analyses to perform and when to perform them. Mandating the performance of retirement analyses prior to the Company's decision to make capital improvements limits the Company's ability to use its best judgment and experience to manage its fleet." (Turner Rebuttal at 6, lines 4–11.)

Q. Is this statement reasonable?

A. No. As this Commission is well aware, oversight of a regulated monopoly utility like DEP is necessary to ensure the protection of ratepayers. Determinations of reasonableness and prudence must be supported with facts and comprehensive analysis. The regulator's role is not simply to ensure that the company managed its contracts and labor costs well. The Commission must evaluate the prudence of capital investment made with ratepayer dollars to protect these ratepayers from unreasonable risk and unjustified costs.

Protecting ratepayers from the burden of uneconomic investments in the Company's coal fleet is impossible without comprehensive retirement analyses of the sort I described in my direct testimony. This conclusion is supported by industry trends and shifting resource economics seen throughout the United States, including in the Carolinas. It is also supported by the many examples, some of which I cited in my direct testimony, of such analyses leading to early retirement decisions, and examples cited here of coal plants with advanced pollution controls that were nonetheless unable to compete with lower-cost alternatives. It is not reasonable for the Company to ask the Commission to turn a blind eye and simply rely on the "best judgement and experience" of the Company on such capital decisions, especially given these trends from around the country.

Q. Are there any other parts of Ms. Turner's rebuttal testimony to which you would like to respond?

A. Yes. Ms. Turner advances the opinion that the retirement analyses I have recommended with respect to future capital investments "are more appropriately addressed in the Company's annual Integrate Resource Planning ("IRP") proceeding." (Turner Rebuttal at 3, lines 8–9.) However, the Company's most recent IRP does not include any such retirement analyses. Instead, the Company hard-wired the projected lifespans of its existing coal units as inputs to its modelling, thus preventing a fair comparison of the economics of the units relative to other resources. For this along with the other reasons I have stated, I maintain my recommendations that the Commission require DEP to complete a comprehensive economic and retirement analysis of each of its coal units prior to any future large capital investments.

III. CONCLUSION

Q. Does this conclude your surrebuttal testimony?

A. Yes.